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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KETTER, JAMES S	

ART UNIT	PAPER NUMBER
1636	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,938	ROBERTS ET AL.	
	Examiner	Art Unit	
	James S. Ketter	1636	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 09 February 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2004. 6/18/07
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Huse et al. (A, newly cited).

The instant claims are drawn to a cloning vector comprising first and second promoters which are independently controllable (claim 1), more narrowly specified in claim 2 that the promoters transcribe the sense and antisense strands, respectively. Claim 7 is drawn to an E. coli host comprising the plasmid of claim 1 or 2.

Huse et al. teaches, e.g., as shown in Figure 3A, the vector pBluescript SK(-), which has T3 and T7 promoters transcribing toward each other through a cloning region, the convergent nature of the promoters determining that sense and antisense strands would be transcribed respectively. This vector is taught throughout Huse et al. as being cloned and maintained in E. coli.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huse et al. (A) in view of Hatanaka et al. (B, newly cited).

Claim 1 was described above. Claim 3 is drawn to a cloning vector having lambda bacteriophage promoter and T7 RNA polymerase promoters. Claim 7 is drawn to an E. coli host cell comprising the vector. Claim 8 is drawn to a method of using the vector of claim 1 or 3 comprising inserting a DNA sequence encoding a cytotoxic protein into said vector, transforming a host cell therewith, culturing the host cell, inducing selective expression of the sense strand and producing the cytotoxic protein.

Huse et al. was described above. Huse et al. differs from the claimed invention in not teaching using lambda bacteriophage promoter as one of the opposed promoters, and in not using the vector specifically to clone a cytotoxic protein.

Hatanaka et al. teaches, e.g., at column 7, last full paragraph, that in creating an expression vector for use in E. coli one could select from a number of promoters, including T7, T3 and lambda promoters.

It would have been obvious to one of ordinary skill in the art to have selected any of the promoters listed by Hatanaka et al. for substitution and use in the vector taught by Huse et al. The motivation to have chosen lambda promoter to replace T3 would have come from Hatanaka et al., which teaches that any of the listed promoters were preferred and would be useful in an expression vector. With respect to claim 8, the term "cytotoxic" is not limited in the specification to proteins toxic to the bacterial host. As such, any protein toxic to eukaryotic cells would be encompassed. It would have been obvious to one of ordinary skill in the art to have cloned essentially any gene into the vector resulting from the combination of the references, which would include genes encoding cytotoxic proteins motivated by the need and desire to produce recombinant proteins, taught as the purpose of such vectors in both references.

Claims 1, 5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huse et al. (A) in view of Collins et al. (C, newly cited).

Claim 1 was described above. Claim 5 is drawn to a cloning vector comprising first and second promoters which are independently controllable, which control is effected by temperature, IPTG addition or RNA polymerase inhibition. Claim 7 is drawn to an E. coli host cell comprising the vector. Claim 8 is drawn to a method of using the vector of claim 1 or 5 comprising inserting a DNA sequence encoding a cytotoxic protein into said vector, transforming a host cell therewith, culturing the host cell, inducing selective expression of the sense strand and producing the cytotoxic protein. Claim 9 recites a cloning vector comprising first and second promoters which are independently controllable, which control is effected by temperature, IPTG addition or RNA polymerase inhibition.

Huse et al. was described above. Huse et al. differs from the claimed invention in not teaching use of IPTG to control one of the promoters, and in not using the vector specifically to clone a cytotoxic protein.

Collins et al. teaches, e.g., at column 36, second and third full paragraphs, the use of an IPTG-controllable system to increase T7 polymerase, and thereby increase transcription form T7 promoters.

It would have been obvious to one of ordinary skill in the art to have used the system taught by Collins et al to render controllable the T7 promoter system of the vector of Huse et al. The motivation to do so would have been apparent from Collins et al. which teaches that the T7 expression system becomes inducible by culturing in IPTG, the advantage of which would have been apparent to one of ordinary skill in the art as rendering any system controllable would have been recognized as advantageous. With respect to claims 8 and 9, the term "cytotoxic" is not limited in the specification to proteins toxic to the bacterial host. As such, any protein toxic to eukaryotic cells would be encompassed. It would have been obvious to one of ordinary skill in the art to have cloned essentially any gene into the vector resulting from the combination of the references, which would include genes encoding cytotoxic proteins motivated by the need and desire to produce recombinant proteins, taught as the purpose of such vectors in both references.

Claims 1 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huse et al. (A) in view of Dunn et al. (D, newly cited).

Claims 1 and 5 were described above. Claim 6 specifies that the RNA polymerase inhibition is effected, among others, by T7 lysozyme expression. Claim 7 is drawn to an E. coli host cell comprising the vector. Claim 8 is drawn to a method of using the vector of claim 1, 5 or 6 comprising inserting a DNA sequence encoding a cytotoxic protein into said vector, transforming a host cell therewith, culturing the host cell, inducing selective expression of the sense strand and producing the cytotoxic protein. Claim 9 recites a cloning vector comprising first and second promoters which are independently controllable, which control is effected by temperature, IPTG addition or RNA polymerase inhibition.

Huse et al. was described above. Huse et al. differs from the claimed invention in not teaching use of RNA polymerase inhibition to control one of the promoters, more specifically inhibiting T7 polymerase by T7 lysozyme expression, and in not using the vector specifically to clone a cytotoxic protein.

Dunn et al. teaches, e.g., at column 15, second full paragraph, that expression of a low level of T7 lysozyme expression reduces the basal activity of T7 promoter and thereby increases the range of genes which can be maintained stably in the expression host cells, by which teaching one of ordinary skill would have been motivated to use T7 lysozyme inhibition of T7 promoter. With respect to claims 8 and 9, the term "cytotoxic" is not limited in the specification to proteins toxic to the bacterial host. As such, any protein toxic to eukaryotic cells would be encompassed. It would have been obvious to one of ordinary skill in the art to have cloned essentially any gene into the vector resulting from the combination of the references, which would include genes encoding cytotoxic proteins motivated by the need and desire to produce recombinant proteins, taught as the purpose of such vectors in both references.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, and therefore claims 2-9 which depend therefrom, recites the term "cytotoxic". However, a gene might encode a protein which is cytotoxic to, e.g., a human cell, but not to the bacterial, e.g., E . coli host cell. As such, it would not have been clear to one of skill in the art whether the term "cytotoxic" is limited to toxicity to the host cell, or whether toxicity to at least some cell is intended. As such, the metes and bounds of the claims are not clear.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Ketter whose telephone number is 571-272-0770. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel can be reached on 571-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSK
30 September 2006

JAMES KETTER
PRIMARY EXAMINER